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INVESTIGATION OF SKYLAB DATA

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Change in technique for determining acreage

Eye-piece grids and a calibration device have been obtained for the B&L Zoom 240 and installed. These grids make the determination of acreage from SKYLAB contact scale transparencies much easier, faster, and more accurate than before. Consequently, the productivity of our interpreters has and will continue to increase.

Preliminary findings for August 5th, S190B SKYLAB imagery

The S190B imagery for the August 5th SL-3 pass has now been received and is being interpreted. We find this imagery to be of excellent quality and, in short, the best that we have yet received from any of the satellites oriented toward the study of earth resources. Our only regret is that the camera was not loaded with color infrared film having equally good resolution but better tonal separation of vegetative cover types.

Under magnification on the order of 15 diameters, there is no difficulty in distinguishing woodlots of as little as 2 acres and sometimes smaller. In general, agricultural fields of 5 acres and often smaller can be located and the boundaries determined with sufficient accuracy for the present studies as long as the bordering fields contain contrasting cover types. As another example of the resolution, the football stadium on the MSU campus and the track adjacent to it can be recognized at this magnification.

This imagery is completely suitable for mapping forest vs. non-forest cover, but the extent to which species composition and stand structure can be determined has not yet been thoroughly investigated. Mature corn (well into the tassel stage) can be recognized, but there is frequent difficulty in distinguishing corn at younger stages from other herbaceous crop species and grasses. Likewise, we have not yet succeeded in finding a color signature which will allow us to separate soybeans from other herbaceous crops on the August 5th, S190B imagery. Note, however, that this is not due to an inability to locate the field and its boundaries since most of the fields are bordered by roads, tractor roads, or fencerows that set them apart from the adjacent fields.

Our best hope for separating the smaller herbaceous crops from SKYLAB imagery alone on a single date appears to be a coupling of the S190B imagery for acreage determination and preliminary identification with the color IR imagery from S190A for additional tonal differences that might aid identification.

The tonal signatures of senescent grains such as wheat and oats that have turned color are sufficiently distinct to allow their separation from green crops on the basis of the S190B imagery alone.

We are looking forward to receiving the September imagery so that we can do some comparison of different dates of photography.